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ABSTRACT

The Communication Program of the Far West Laboratory for Educational Research and Development is creating a self-contained training package on Instructional Planning for administrators, teachers, and others who plan, select, manage, and evaluate instructional programs. The training package consists of three sequential units: Problem Analysis, Goal Setting, and Objectives and Evaluation. The training units are being revised on the basis of preliminary field test results, which showed that the units partially achieved their objectives of improving attitudes, knowledge, and skills relevant to instructional planning. The Problem Analysis unit is discussed in depth to illustrate the research and development cycle used to develop the training package. (Author/AG)

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Training Package Turns School People into Instructional Planners

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The Laboratory was established through a Joint Powers Agreement, in February 1966. Signatories as of June 1969, include:

The Regents of the University of California
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The County Superintendent of Schools of the County of Monterey
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The Regents of the University of Nevada
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The Board of Regents of the University of Utah
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The Communication Program of the Far West Laboratory for Educational Research and Development is developing a self-contained training package on Instructional Planning for administrators, teachers, and other groups involved in school planning. The training package consists of three sequential units: Problem Analysis, Goal Setting, and Objectives and Evaluation. Preliminary field test results, showing that the preliminary form of the units partially achieve their objectives of improving trainees' attitudes, knowledge, and skills relevant to instructional planning, are being used to revise the training units prior to further testing. The Problem Analysis unit is discussed in depth to illustrate the research and development cycle used to develop the training package.

Introduction

An important move in education today is the effort to make local school districts accountable. Schools are seeking to evaluate the success of school programs in terms of their impact on student learning. They are also being called upon to clarify the objectives of the school program, and to demonstrate to concerned groups that these objectives are relevant to the goals and problems of society.

This emphasis on accountability and relevance has begun to influence educators' views concerning the type of training needed by the school people who plan, select, manage, and evaluate instructional programs. A series of "training packages" is being developed by the Far West Laboratory for Educational Research and Development in order to meet some training needs in the area of instructional planning and management. This paper describes the preliminary development of the Laboratory's first training package, on Instructional Planning. Even though this training package is not yet ready for widespread dissemination, it should be of interest to educators concerned about new techniques for training school administrators and other school people. In this paper, therefore, the developers will describe the package and explain the procedures being used in its development.

Objectives

When development of the first training package was undertaken by the Laboratory's Communication Program, the Program staff decided to divide the package into three sequential training units: Problem Analysis, Goal Setting and Objectives and Evaluation. The initial description of each unit included a list of the overall goals which it was to achieve. The Problem Analysis Unit aims to train school people to define problems in terms of existing and

desired student outcomes based upon a variety of problem "signals," to determine what information is needed to analyze each problem and how to obtain it, and to use the information to judge the validity and relative seriousness of each problem. The Goal Setting Unit seeks to improve their ability to relate validated problems to school goals, to determine the potential impact on the school system of solving one or more problems, and to develop goals and goal indicators which indicate in broad, but behavioral, terms the desired student outcomes in high priority problem areas. The Objectives and Evaluation Unit aims to improve school people's ability to break down the goal indicators for given problem areas into more specific student outcome objectives, to analyze objectives for their appropriateness in various settings, and to develop an evaluation plan to measure the achievement of objectives following instruction.

Actual development of the training units began with the specification of performance objectives for school personnel after they complete each unit. The overall goals were broken down into performance objectives of three types: knowledge objectives (concerned with increasing trainees' knowledge of the processes involved in instructional planning); skill objectives (concerned with increasing trainees' ability to perform these processes); and affective objectives (concerned with improving trainees' attitudes toward, or desire to apply, these processes in their work). The training units will become available to school districts only after the developers have demonstrated through field use that they successfully achieve their performance objectives.

A few examples of the performance objectives for Unit 1, Problem Analysis, illustrate what trainees are to learn by using the training package. Standards for the skill objectives are presently being established.

Knowledge: Given the names of the three phases of Problem Analysis (Defining Student Outcome Problems, Planning to Collect Information to Analyze Student Outcome Problems, and Determining Validity and Seriousness of Student Outcome Problems) each trainee will be able to describe in writing the major objectives of each phase at a level judged by the developer to be "5" or better on a 7-point scale going from very poor ("1") to excellent ("7").

Skill: Given a list of alternative methods for collecting information to analyze problems, and a maximum budget limit for collecting the information (e.g., $600.), each trainee will specify an information collection plan which includes the most cost-effective methods--that is, those methods which will best answer his questions while staying within the budget limit.

Skill: Given a set of simulated problem materials which refer to several student outcome problems in the same problem area, each trainee will be able to discriminate those student outcome problems which appear to be valid, those problems that appear to be invalid, and those problems whose validity cannot be determined from the information given.

Affective: Each trainee will rate the usefulness of problem analysis for helping plan the instructional program to be "5" or better on a 7-point scale going from not useful ("1") to extremely useful ("7").

Product Description

Our major specifications for the operational (final) form of each training unit are that it be:

a. Basic. Each training unit is meant to provide coverage of only those skills that are basic to instructional planning. Thus the "entry level" of trainees need not be high, and the skills covered are those that appear to be of general relevance to instructional planners having a wide range of duties and responsibilities. (Another version of the training package, to be developed later, will cover more advanced skills involved in instructional planning.)

b. Independent. Although the three training units in the package were conceptualized as falling into a logical sequence, we are designing the units so that they may be taken in any sequence or each one can be used alone. A general orientation to the training package will describe the processes covered in each training unit, and the simulated background information will be common to all the units.

c. Self-contained. When the training units become operational, they will no longer be dependent upon the presence of the developer, will include all the materials and instructions necessary for a Coordinator to conduct the course, and will be appropriate for a variety of training settings and schedules.

Since each training unit is made up of various "elements" (e.g. guidelines, training exercises) and uses several methods (role playing, team work, etc.), the developers also included in their product specifications the condition that each element and method be valued, or favorably rated by trainees.

To develop a product which will meet the objectives and specifications described, a systems approach is being used. Thus each training unit represents one step in a comprehensive set of procedures for systematically attacking instructional problems. The training units require the trainee to engage in simulation activities in which he acts as an instructional planner in a district-wide Instructional Planning Team. For example, the Problem Analysis training unit begins by presenting an assortment of memoranda, news clippings, etc. which signal various problems in the hypothetical Mid City Unified School District (MCUSD).

From this information, the trainee is asked to identify the major problems, not in terms of any personal or nation-wide significance he may attach to them, but strictly in terms of the situation that exists in Mid City. The content of each training unit is programmed, or sequenced to provide the same set of instructional experiences with every presentation. First the trainee receives written guidelines that describe step-by-step how to perform a given skill, followed by training exercises, complete with detailed instructions and worksheets, that give him an opportunity to practice applying the skill. Then he receives written feedback on how well he performed. In attempting to apply the instructional planning skills, he operates as a member of a team. This enables him to experience how varying perceptions and values affect group decision-making.

The training materials are intended for use by school administrators and other people involved in long-range, district-wide instructional planning. This may include persons who are aspiring to district-wide positions, as well as persons who presently have responsibilities for the instructional program of an entire district. Each unit requires 10-15 hours in training sessions, which may be arranged on a distributed or massed schedule, depending on the site and the Coordinator's preference. A Training Coordinator conducts the sessions. He is knowledgeable about all the training materials and, in addition to giving instructions for each training activity, may clarify procedures, answer questions, and give trainees additional feedback on their performance.

The R & D Cycle Used to Develop the Training Package

Before the Instructional Planning package becomes available for general dissemination, it will complete a rigorous development cycle. The cycle begins

with conceptualization, in which the need for and feasibility of the package are analyzed, and ends with preparation of a plan for disseminating the package and providing for quality control. The ultimate outcome of this cycle will be an Instructional Planning package that has been demonstrated as satisfactorily meeting product specifications and achieving performance objectives.

Evaluation is conducted at every stage in the cycle, and revision of the package follows each stage of evaluation. The number of field test participants, as well as the formality of the data collection and analysis, increases at each subsequent stage, and the purpose of evaluation shifts from gathering information indicative of needed revisions of the training package to demonstrating the effectiveness of the package as a training device for school people.

To date, the Instructional Planning package has completed three stages of a seven-stage R & D cycle, and it is therefore in developmental rather than operational form. Development began with the Conceptualization stage. First, evidence was gathered demonstrating the need for an administrative training package dealing with instructional planning techniques. A literature review and interviews with administrators from several local school districts revealed that a sizeable proportion of school administrators perceived a need for better training, including techniques for long-range planning, for communicating to the community the major problems facing the schools, and for convincing people of the educational priorities they set. The proposed solution to the need was derived from a literature review of theoretical planning models applicable to educational administration. Models of systems analysis, problem solving, decision making, and knowledge utilization were all reviewed, as well as some existing training programs based on such models.

The research literature on training methods, including simulation and gaming, inbasket techniques and programmed instruction, was also consulted. The proposed solution that emerged was a self-contained training package using simulation as the means to present a system analytic approach to instructional planning.

For the Problem Analysis Unit, a major portion of the conceptualization stage was devoted to developing and getting expert ratings of proposed performance objectives. An objectives questionnaire was administered to practicing administrators from several districts, and to Laboratory personnel. Respondents rated each objective for its a) worthwhileness, b) feasibility, c) achievability, and d) measurability. On the basis of the mean ratings, the developers were able to eliminate a few objectives and conclude that the remaining objectives were reasonable ones to attempt to achieve. Conceptualization of the training does not end here, however. Evaluation data gathered at each subsequent stage of development are used to modify the conceptualization and to revise or supplement the objectives.

Next a few tentative elements of the Problem Analysis unit were developed. This marked the beginning of the second development stage, Feasibility Testing. A prototype of the training unit was developed, including a short explanation of the proposed training program, a one-hour written exercise using simulated materials, and a short followup discussion on the usefulness of the exercise and the materials provided. The Problem Analysis prototype was tested for feasibility with two small groups of potential trainees: a graduate education class at a local university and a group of building-level and central office administrators from a local school district. The trainees (*N*=15) provided both oral and written feedback on the exercise and suggestions for improvement.

Now the training unit entered the stage of Preliminary Field Testing. A preliminary form of the Problem Analysis unit was developed and used in four field tests over a six-month period. Each field test was an official college or university course, in which trainees went through all the training and evaluation procedures. A total of fifty trainees participated in the preliminary field tests for Problem Analysis. About half of them were practicing school administrators, primarily building principals. Most of the other trainees were teachers, many of whom had supervisory responsibility or were seeking administrative credentials.

The other two units of the Instructional Planning training package are following a development cycle similar to that described for the Problem Analysis unit. The Goal Setting training unit has, like Problem Analysis, completed the Preliminary Field Test stage. The Objectives and Evaluation unit is in the Conceptualization stage, but is receiving a concentrated development effort so that all three units of the training package will complete their R & D cycle at the same time.

Highlights of the Preliminary Findings and Planned Revisions

Analysis of the data collected during the preliminary field tests has been completed, and the findings are being used by the developers to revise the training units prior to further testing. The results of subsequent field tests will be addressed to the issue of how well the product works, i.e. how well it meets performance objectives and product specifications. In this paper we shall discuss some general conclusions reached on the basis of the preliminary findings, and the plans for revision which these findings indicated.

Skill Objectives

To date each field test has included special pre- and post-tests to determine the extent to which trainees increase their skills in instructional planning as a result of using the training unit. While statistical analyses of the test results from the first two field tests provided some evidence of improvement in terms of simple, countable scores--for example, the number of factors that determine the seriousness of student outcome problems which trainees could list--the results were not adequate for testing the more complex skills stated in the performance objectives (see p. 3). Therefore, for our last preliminary field test we revised the pre- and post test to more closely approximate the activities trainees go through during training, including the provision of partially filled-in worksheets (rather than blank paper) for their responses, and the use of "ideal responses" which raters could use in evaluating each trainee's response to each test question. In our subsequent field tests we will attempt to evaluate the actual output of the training activities, that is, the worksheets that individuals or teams complete during training.

Knowledge Objectives

Using several "knowledge questionnaires," we sought information concerning trainees' knowledge of the purpose of problem analysis and of the major process involved in it, of the concepts presented in the training unit, and of the likelihood of certain benefits which a school might receive from taking a problem analytic approach to instructional planning. The results were promising but uneven. Trainees were not up to standard in terms of their knowledge of the purpose of problem analysis and of each major process involved in it but demonstrated adequate knowledge, in terms of recall, of most of the concepts presented (e.g. problem signal, desired state,student outcome).

Furthermore they perceived more benefits to be likely from taking a problem analytic approach than we deemed reasonable, for example helping a school to determine what solution should be adopted for a particular problem, or to determine the cost of solving a problem. Based on these results, we are revising the training unit to provide a more thorough orientation to the purposes of problem analysis and the benefits it will and will not provide. We will also "program" the guidelines, so that trainees receive a definition of each important concept, see it illustrated by examples, and test themselves for knowledge of the concept before they proceed to training activities using the concept.

Affective Objectives

A majority of the test participants judged the processes involved in problem analysis to be useful in planning, decision making, and problem solving. The major suggestion of those trainees who did not rate the usefulness of problem analysis as high was that the unit should help trainees apply the skills covered in training to their real-life problems. We intend to add an "application" element to the unit which will suggest ways in which the skills and knowledge learned in training can be applied to trainees' own school problems. We also intend to make our rationale for using simulation clearer, namely the fact that simulation provides a common background for trainees so that they can work together on problems, and that it is a means of learning skills which can be transferred to other problems than those covered in training.

Product Specifications

Trainees' reactions suggested that the first major product specification, i.e. that basic skills be covered, is generally being met. The skills covered do not appear to be too difficult except perhaps for persons almost completely unfamiliar with educational administration. Moreover, trainees

from a variety of positions in the school hierarchy have found the training useful, as described below under trainees' reactions to the elements and methods used in the training unit.

The ability of the training units to function independently, which is the second major product specification, will be tested during the Performance Test stage. At that time we will have added an improved orientation to the training package that can be used with any of the three units, and will begin using a few different sites for field testing each of them.

A significant step was taken toward meeting the unit's third major product specification, namely, that the unit be "self-contained," with the introduction of a non-staff Training Coordinator during the last two preliminary field tests. The Coordinators were given written instructions and briefings by the developers prior to the training sessions. However, their role was left fairly unstructured so that the developers could learn how to best define it by observing the personal styles that were adopted by each Coordinator. We became convinced after observing these preliminary tests that it is necessary for the Coordinator, at the minimum, to be responsible for making physical arrangements, scheduling training activities, and giving instructions. If the unit is to succeed, these duties cannot be neglected in favor of other role preferences. However, we also learned that the Coordinator could add to the value of the training if he also provided leadership and feedback to the trainees. This additional role will be suggested in future field tests as an option, not a requirement, for the Coordinator, since we do not wish the success of the training units to depend on the expertise and leadership ability of each individual Coordinator.

From trainees' ratings and open-ended responses on a questionnaire administered at the end of each preliminary field test, we were able to learn which elements and methods of the training unit were being favorably

received and which, in the opinion of the trainees, needed revision. Most trainees rated the content of the Problem Analysis guidelines as highly useful, endorsed the methods of simulation and team work used in training, and rated the amount of information presented in the simulated documents to be appropriate for making the educational decisions called for. Aspects of the unit that were not as favorably received were the use of role-playing, the format of the guidelines, the amount of written work required, and insufficient time for reading assignments, group discussions, and the unit as a whole.

We are attempting to improve the role-playing by eliminating the single "role" (i.e., the new Assistant Superintendent for Instruction in the simulated school district) that all trainees were asked to assume even when functioning as members of a team along with other trainees. The training unit will be revised either to introduce various roles which the team members may play (e.g. teacher, principal, curriculum coordinator) or to prescribe a general role (an instructional planner for MCUSD) for all trainees. As a means of responding to trainees' frequent complaints of being rushed and overworked, we plan to introduce a more flexible training schedule at the next stage of field testing. This would permit the Coordinator to schedule certain training activities (e.g., reading of guideline materials and individual written assignments) to be performed outside of class, thus allowing more class time for team work and class discussions. The guidelines themselves will be reorganized to better serve as reference tools during the training exercises.

Plans for Further Development

At present we are entering the Performance stage (stage 4) for the Problem Analysis training unit. This involves revising the preliminary product based on our findings, field testing the product with

trainees representing a wider range of school and regional variations, and implementing a more polished evaluation plan to gather evidence of the product's worth as a training device. During this stage there is one final opportunity to revise the product in order that it better meet its performance objectives and product specifications. In the summer and early fall of 1971 we will complete Operational Field Testing (stage 5) of the training unit. This stage involves field testing the product in its operational (final) form, with minimal Laboratory involvement. The main purpose of the Operational Test stage is to obtain evidence regarding the product's readiness for release to potential users (e.g., university departments of education and school districts developing staff training programs).

The target date for completing the Operational Field Test stage of all three training units is November, 1971. At that time we will also have developed a plan for dissemination (stage 6) and a plan for maintaining quality control (stage 7) over the product after its release.

The training package that we have described is one of several now being developed or planned by the Communication Program of the Far West Laboratory for Educational Research and Development. It is hoped that this paper has given the reader some insight into the nature of the R & D model being used in the Program's development work.